MARINE REVIEW.

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The Gordons and the Northern Steamship Co.

Although newspaper dispatches referring to the retirement of John Gordon and his son, F. P. Gordon, from the management of the Northern Steamship Co, all refer to differences between President J. J. Hill of the Great Northern Railway and Mr. Gordon, Sr., on account of the latter's connection with the Union Transit Co., Mr. F. P. Gordon speaks of the matter in a different light. "There were no differences" he says "leading up to my father and myself leaving the Northern Steamship Co. My father's interests in connection with the Union Transit Co., and other matters, were such that his personal affairs demanded his entire attention, at least for the present. I left the employ of the steamship company for two reasons. One was that I desired a vacation after more than two years of close attention to business in connection with the construction of the passenger boats, and also that I have other business matters in view which seem to me more desirable than remaining with the steamship company."

JOHN GORDON, STEAMSHIP MANAGER, BUFFALO, N. Y.

John Gordon has been a prominent figure in lake transportation circles for a great number of years. His present interest in the Union Transit Co. may make him even more prominent. In early manhood he met with some reverses, but he has always been looked upon as a man of many resources and he possesses a great deal of push and energy. Away back in the fifties, he was a steamboat clerk in the Lake Superior trade on boats owned by Eber Ward and John Hutchins. During this time and for several years later when he owned and managed a few small vessels his home waa in Detroit. As business began to develop at the head of the lakes he built up a steamboat agency at Duluth. He was agent for the Northern Transportation Co., which operated a line of boats between Ogdensburg and Duluth, and at the same time represented in Duluth Leopold & Austrian, Chicago people who still control the Lake Michigan & Lake Superior Transportation Co. Success with these lines led to his appointment as agent of the Lake Superior Transit Co. at Duluth, and later he went to Chicago as representative of the Anchor line. These two latter companies were the big concerns in the passenger and package freight business when Mr. Hill decided to enter the lake trade and picked upon John Gordon to build and manage freight and passenger ships.

Mr. Gordon's success in building up a line of freight boats and inaugurating for the Great Northern company a passenger service on the

(CONTINUED ON EIGHTH PAGE.)

Heavy Fall Shipments of Lumber.

With a view to aiding vessel owners and shippers in forming an opinion as to the effect which the lumber movement will have on fall freights, some opinions and figures regarding shipments have been secured from the principal lumber districts. Rates have been advancing for some time past, but shippers at the head of Lake Superior are understood to have entered into an agreement this week to hold the Buffalo-Tonawanda rate to $2.12½ for the present, if it is possible to do so. The rate to Chicago from the head of the lakes is $2.25.

Capt. Sinclair of the firm of Alex R. Sinclair, Ashland, is fully in touch with the situation at the head of the lakes and is in a position to write intelligently regarding the market. He says: "Prospects for the fall trade in lumber from this section are very encouraging, and shipments from the bay will be large for the year. Shipments to August 1 amounted to 125,198,000 feet, divided as follows: May, 48,735,000 feet; June, 34,060,000; July, 42,403,000. Figures for the month just closed, August, are not complete, but the shipments were approximately 50,000,000 feet, which would bring the total for the season thus far to 175,198,000 feet. About 30,000,000 feet of lumber is now on the docks awaiting shipment, and full 40,000,000 more will want shipment before the close of navigation, making the aggregate for the entire season about 240,000,000. There is, of course, nothing certain in the matter of fall freights, but the market is advancing at present, and we are of the opinion that rates will go up steadily during the present month and finally reach the climax about Oct. 15."

From Menominee, a district that is now supplying the eastern market as well as Chicago, the REVIEW is in receipt of the following: "The prospects for an increase in lumber shipments from this port and Marinette by water during the balance of the season are very promising. Of the 400,000,000 feet to be cut by the mills on both sides of the river and the bay shore, less than one-third has been shipped thus far. It is safe to say that 85 per cent. of the entire product of the mills goes to market by water, so that there still remains fully 250,000,000 feet to be shipped by vessels. Large purchases of lumber were made by Chicago and eastern parties early in the season, embracing the entire cuts in some instances. Of these orders little more than the piece stuff has been sent out, so that nearly all of the white pine remains. The mills of the Blodgett & Davis Co., Donovan & O'Connor and Ramsey & Jones alone have fully 25,000,000 feet of this lumber awaiting shipment. Besides this, the cut of the H. Witbeck Co.'s mill, estimated at 40,000,000, which is being handled by Holland, Graves & Montgomery of Buffalo, all goes by lake to the east. The boats of this company handle about 6,500,000 feet a month, and it is understood that more carriers will be added soon, in order to move the balance of the big product before the close of navigation.

"The new steel steamer now being built at Bay City for L. H. McCormick & Co. will be put in commission not later than Oct. 1. This boat alone is expected to carry between 1,500,000 and 1,800,000, which will entitle her to the credit of being the largest lumber boat on the lakes."

Sailors' Wages.

Members of the Lake Carriers' Association met in Cleveland Tuesday and made some changes in the schedule of wages. It was thought that the entire schedule would be advanced, but the wages of engineers, as well as mates and cooks on steam vessels, remain as they have been since the opening of navigation. The part of the card in which changes have been made follows:

EMPLOYES ON STEAM VESSELS.

	Old schedule. Per month.	New schedule. Per month.
Firemen	$25 00 to $30 00	$30 00 to $37 50
Wheelmen	25 00 to 30 00	30 00 to 37 50
Lookouts	20 00 to 30 00	30 00 to 35 00
Deckhands	12 00 to 15 00	15 00 to 18 00
Oilers	25 00 to 30 00	30 00 to 37 50

EMPLOYES ON SCHOONERS AND TOW BARGES.

First mates	$30 00 to $45 00	$35 00 to $50 00
Second mates	25 00 to 35 00	30 00 to 40 00
Cooks	25 00 to 30 00	30 00 to 35 00
Seamen	25 00 to 30 00	30 00 to 35 00
Boys	12 00 to 15 00	15 00 to 20 00

Secretary Keep attended the meeting, but President Livingstone of Detroit was unable to be present, and for that reason several matters pertaining to legislation during the coming winter, in which Mr. Livingstone is to take an important part, were not brought up. Capt. Geo. P. McKay was authorized to pay $200 for the maintenance of lights recently placed in the vicinity of Bois Blanc island and the Lime-Kiln cut.

CAPTAINS AND MATES ARE INVITED TO CALL AT THE OFFICE OF THE MARINE REVIEW, AND LOOK OVER THE CHARTS AND SAILING DIRECTIONS OF LAKES SUPERIOR, HURON, ERIE AND ONTARIO, PUBLISHED BY THE HYDROGRAPHIC OFFICE.

In General.

The Russian armored cruiser Russia, a ship of over 12,000 tons, is being remodelled to burn oil instead of coal.

Nashville, Wilmington and Helena are the names selected for the three gunboats being built at Newport News, Va.

A new register of the revenue cutter service, said to be most complete, has just been issued by the treasury department.

National President George Uhler of the Marine Engineers' Beneficial Association is now visiting local organizations on the Pacific coast. He will return to Atlantic coast associations by way of Galveston and New Orleans.

Irving M. Scott, president of the Union Iron Works, San Francisco, has gone to Japan to bid on contracts for war vessels, and the Cramps of Philadelphia already have a representative in that country. Japan is said to be preparing to spend $40,000,000 for war vessels. English builders will, of course, be after the work.

Upon the completion of the St. Paul, sistership of the American line steamer St. Louis, the latter vessel will be taken to Cramp's ship yard, where she will be fitted with funnels larger than those which she now carries. The larger funnels are expected to assist in developing greater power with the ship's machinery.

Capt. A. T. Mahan, U. S. N., will contribute to Harper's Magazine for October an article on "The Future in Relation to American Naval Power." He advocates a strong navy as a promotor of peace and of American interests, and assails the dogma that the national defence should be the sole purpose of battleships.

A French torpedo boat named Forban, which was given a preliminary trial recently at Havre, is reported to have attained a speed of 29.26 knots on a long run and 30 knots for a short distance. The boat is 136 tons displacement, 144 feet long by 13 feet 6 inches broad, and at the time of trial drew 8 feet of water. Her engines are capable of developing 3,200 horse power.

The total amount of excavation involved in the construction of the main channel, Chicago drainage canal, is 26,077,765 cubic yards of glacial drift and 12,071,668 cubic yards of solid road, or an aggregate of 38,149,433 cubic yards, to which must be added the material excavated from the river diversion, of which there is 1,823,329 cubic yards, making a grand total in main channel and river diversion of 39,972,762 cubic yards. All of this work is now under contract and there is also under contract 384,958 cubic yards of retaining wall.

W. D. Weaver of New York has evolved an algebraic formula for the computation of distance and time in which a ship may be brought to rest from full speed ahead. He estimates that by promptly reversing the machinery, the time and distance required to bring the following vessels from full speed ahead to a full stop would be: Cunarder Etruria, 167 seconds and 2,464 feet; U. S. S. Columbia, 135 seconds and 2,147 feet; U. S. S. Yorktown, 84 seconds and 989 feet; U S. S. Bancroft, 91 seconds and 965 feet; torpedo boat Cushing, 18½ seconds and 301 feet.

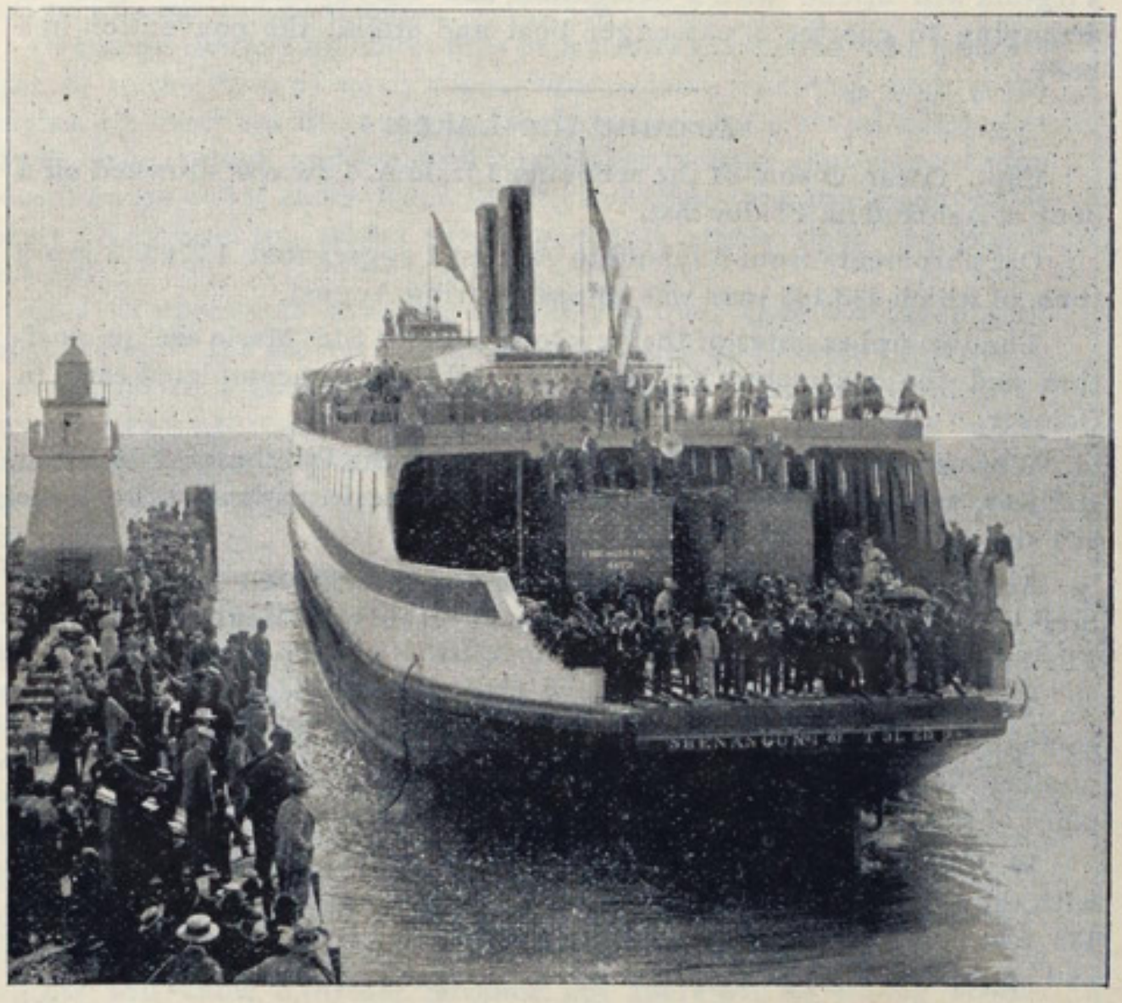
That Secretary Herbert will make an earnest effort to secure an increase of the navy from the next congress is now definitely known. Acting under the instructions of the secretary, Chief Naval Constructor Hichborn has prepared estimates for two training ships for the use of the naval cadets to cost $500,000. Their motive power, according to the present intentions, will be sail only, but otherwise they will be of the most modern character. Their displacement will be about 1,400 tons. One of the proposed features of these ships is bottom sheathing.—Army and Navy Journal.

If the press dispatches are to be believed, Harland & Wolff of Belfast, Ireland, are to build for the Hamburg-American Packet Co. a ship that will be by long odds the largest in the world. The boat is to be a twin-screw steamer of 20,000 tons carrying capacity Although intended primarily for freight, she will have cabins on deck for 200 first-class passengers, and provision will be made also for 1,500 steerage passengers. The Harlands are said to have secured the order on a tender that was very much below prices made by German builders, and also on account of an agreement to have the steamer ready in ten months, as against nineteen months' time required by the German builders.

According to the 1895 edition of "Poor's Manual of Railroads," just published, the length of track laid in the United States up to Dec. 31, 1894, was 179,279.34 miles. The net increase of mileage of all railroads in the United States in the calendar year 1894 was 1,821.38 miles. There was a total revenue train mileage in operation in 1894 of 881,332,712 miles including passenger, freight and elevated railroad traffic. Compared with 1893, the gross earnings of the railroads decreased in 1894, $142,313,275, to which decrease the elevated railroads contributed only $1,315,290. The total liabilities of the railroad companies at the close of 1894 were $11,565,600,207, and the total assets $1,924,450,884, leaving an excess of assets over liabilities of $358,850,677.

Car Ferry Service on the Lakes.

Another car ferry line has been talked of since the inauguration of the service on Lake Erie between Conneaut, O., and Port Dover, Ont. Capt. Martin, superintendent of the Flint & Pere Marquette railway line of steamers operating on Lake Michigan, was in Conneaut, a few days ago, looking over the new steamer Shenango, and is understood to have been making investigations of late regarding the Ann Arbor ferries, the big ice crushers at the Straits of Mackinac and the tow barges constructed by Capt. James Davidson of West Bay City for service on Lake Michigan. As the F. & P. M. Co. has for a great number of years operated several steamers on Lake Michigan in both winter and summer service, it would not, of course, be at all surprising if these investigations result in the construction of a line of car ferries.



CAR FERRY SHENANGO NO. 1.
(From the Illustrated Buffalo Express, copyrighted.)

The accompanying engraving illustrates very plainly the simple manner in which cars may be run onto tracks in these ferry steamers. The picture represents the Shenango, No. 1, first of the Conneaut-Port Dover boats. This steamer has made the round trip across Lake Erie from Conneaut to Port Dover and return in 13½ hours and is expected to fulfill all requirements of the trade. The boat was taken from the Craig ship yard, Toledo, without her machinery being given the usual trials, and some difficulty was encountered on the first few trips, but everything is now working satisfactorily, and the indications are that both boats will find plenty of business. The second steamer will be in service probably next month.

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principal points of accumulation on the lakes on Aug. 31, 1895:

	Wheat, bushels.	Corn, bushels.
Chicago	14,218,000	1,405,000
Duluth	4,605,000	.....
Milwaukee	430,000	.....
Detroit	505,000	59,000
Toledo	1,112,000	152,000
Buffalo	1,243,000	348,000
Total	22,113,000	1,964,000

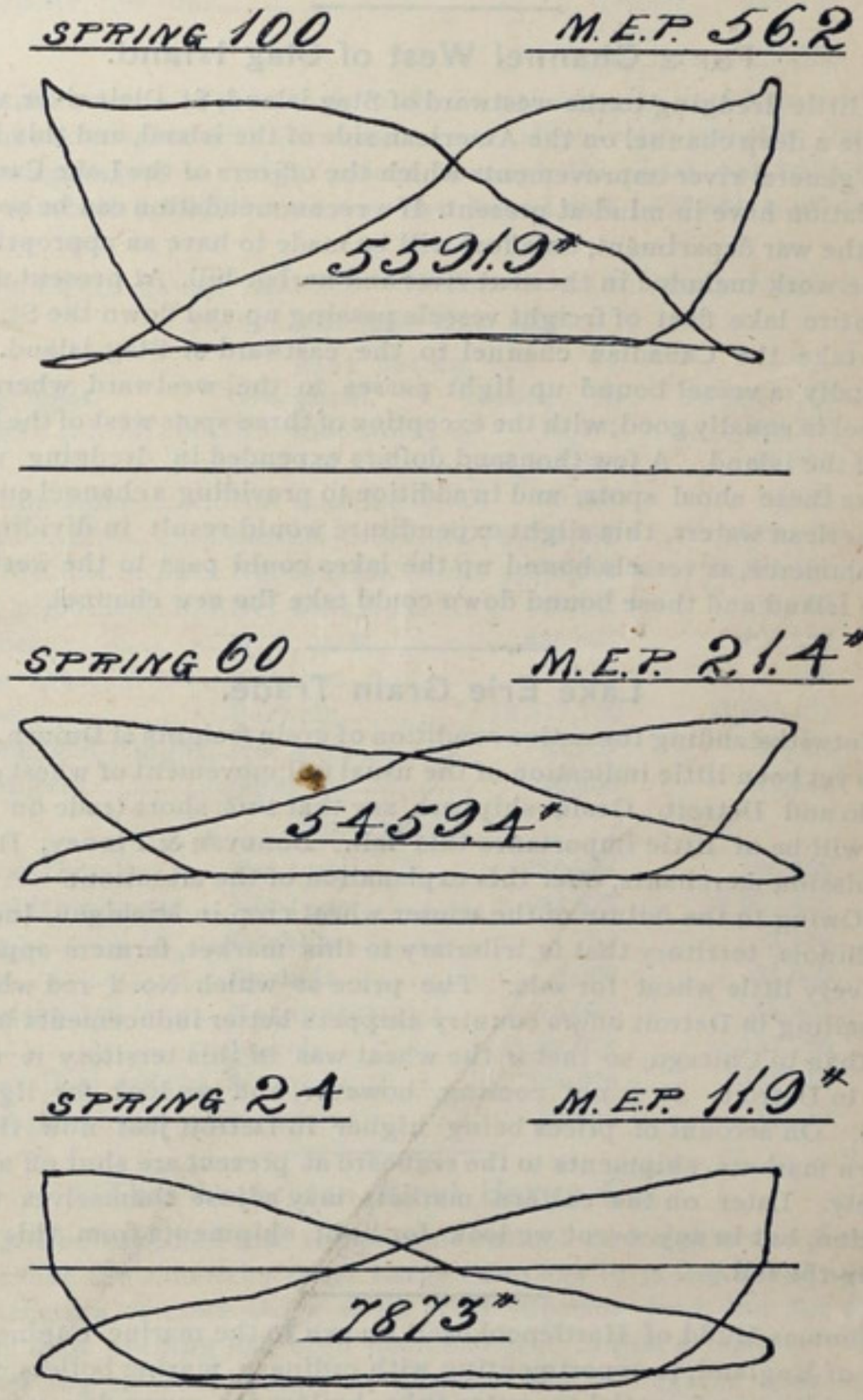
As compared with a week ago, the above figures show at the several points named an increase of 246,000 bushels of wheat and a decrease of 235,000 bushels of corn.

Marine Engines for Electric Lighting Service.

The public lighting commission of Detroit recently completed the erection of a big plant for lighting the city, in which five engines of triple expansion marine type, for driving large dynamos, were installed by S. F. Hodge & Co., a Detroit firm well known as builders of marine machinery. The application of the marine type of triple expansion engines to service of this kind is not common, although there is an electric street railway power plant in Cleveland, for which the Globe Iron Works Co. has furnished five triple expansion marine engines, which are directly connected with dynamos, and one of which is a duplicate of the engine in the Cleveland Rolling Mill Co's steel steamer Samuel Mitchell.

S. F. Hodge & Co. recently obtained a test of one of the engines in the Detroit plant, which was conducted by A Geo. Mattsson, their designing engineer, assisted by the staff associated with him in the works. The test was made Aug. 15, 16, between 8 p. m. and 4 a. m., under ordinary working conditions, the engine driving four arc light dynamos. As will be seen by the record, which follows, the load is somewhat in excess of that specified, which was 340 I. H. P.:

RECORD OF PRELIMINARY TEST OF ENGINE NO. 2 AT PLANT OF PUBLIC LIGHTING COMMISSION, DETROIT, MICH.



Cards No. 16 from engine No. 2, Detroit public lighting plant, taken Aug. 16, 1895—Cylinders 11¼, 18 and 29 inches, by 18 inches stroke of piston: steam 160 pounds; vacuum 25¾ inches; revolutions, 205; I. H. P., 352.9; M. E. P., 28.67 pounds.

Type of engine—		
Vertical inverted triple expansion.		
Power transmission—		
Connected to four dynamos by means of rope.		
Air and feed pumps—		
Of the Worthington combined type worked independent from a separate boiler.		
Cylinders—		
Diameter, high pressure	11¼	inches
" intermediate pressure	18	"
" low pressure	29	"
Common stroke	18	"
Average steam pressure, at boiler	160	pounds
Average vacuum at condenser	25¾	inches
Average number of revolutions	205	
Average horse power (indicated) from sixteen sets of cards at half hour intervals	352.9	
Total water consumption in eight hours, from meter	42,101	pounds
Total water consumption in one hour, from meter	5,262.6	"
Water per indicated horse power per hour	14 91	"

No notice was taken of the coal consumption or the temperature of feed water, as the boilers, air pumps and heater were furnished by other contractors, but it is probable that before long the lighting commission will cause a complete test to be made.

(CONTINUED FROM FIFTH PAGE.)

lakes that is equal to the finest transatlantic service, is a matter of only a few years, and readers of the REVIEW are fully acquainted with the details of it. It is a fact that while with the Northern company he became interested in a competing line, the Union Traneit Co., and his attentions are now to be turned toward the development of that line. His successor in the Northern Steamship Co. is W. C. Farrington, a railway manager of high reputation, who has been associated with Mr. Hill in the past. Mr. Farrington will be assisted by Francis B. Clark of St. Paul, who will be manager of the steamship company, and who has already taken up his duties at Buffalo. F. P. Gordon will remain with Mr. Clark for a short time. He is said to have another steamboat scheme of importance in view.

For a Channel West of Stag Island.

A little dredging to the westward of Stag island, St. Clair river, would provide a deep channel on the American side of the island, and this is one of the general river improvements which the officers of the Lake Carriers' Association have in mind at present. If a recommendation can be secured from the war department, an effort will be made to have an appropriation for the work included in the next river and harbor bill. At present nearly the entire lake fleet of freight vessels passing up and down the St. Clair river take the Canadian channel to the eastward of Stag island. Occasionally a vessel bound up light passes to the westward, where the channel is equally good, with the exception of three spots west of the lower end of the island. A few thousand dollars expended in dredging would remove these shoal spots, and in addition to providing a channel entirely in American waters, this slight expenditure would result in dividing up the commerce, as vessels bound up the lakes could pass to the westward of the island and those bound down could take the new channel.

Lake Erie Grain Trade.

Notwithstanding the active condition of grain freights at Duluth, there has as yet been little indication of the usual fall movement of wheat out of Toledo and Detroit. Grain shippers say that this short trade on Lake Erie will be of little importance this fall. Donovan & Finney, Detroit commission merchants, offer this explanation of the situation:

"Owing to the failure of the winter wheat crop in Michigan, Indiana, and Illinois, territory that is tributary to this market, farmers appear to have very little wheat for sale. The price at which No. 2 red wheat is now selling in Detroit offers country shippers better inducements to ship here than to Chicago, so that if the wheat was in this territory it would come to Detroit. It is not coming, however, and we look for light receipts. On account of prices being higher in Detroit just now than in eastern markets, shipments to the seaboard at present are shut off almost entirely. Later on the eastern markets may adjust themselves to the situation, but in any event we look for light shipments from this point during the fall."

Thomas Mudd of Hartlepool, well known to the marine engineering trade of England, is experimenting with ordinary marine boilers, which he considers preferential to water tube boilers for every day work, for economy and safety; at the same time he considers that higher pressures are necessary to obtain economy, and boilers which he has now under construction at Hartlepool are designed for 260 pounds pressure. The engines also are designed with five cranks, giving ten impulses as against four in the compound and six in the triple expansion engines. With five cranks a perfect balance is almost attained, and the engines can be run as smoothly as a dynamo. With these improvements and others Mr. Mudd hopes to obtain the much-coveted one-horse-power per pound of coal consumed per hour, which he considers quite within the range of possibility. He is of the opinion that water tube boilers have a mission of their own, but evidently he does not consider them to be so economical or so safe for the merchant marine as the cylindrical boiler.

The naval estimates now being prepared at the navy department will show a notable decrease in the amount necessary for continuing work on the new navy. Last year congress appropriated about $13,000,000 in all for payments on new ships including armor and armament. It was the heaviest appropriation made since the work of rehabilitating the navy first commenced. This was due to the fact that the bulk of the obligations with ship contractors and armor manufacturers fell due during the current year. The estimates for the coming year on account of the new navy will be at least $5,000,000 less than the current appropriation. It is not the intention of the department, however, to urge a cessation of work on the new navy. On the contrary, it is said that Secretary Herbert will ask for at least one or two more battleships and a number of torpedo boats, and the estimates which will soon go to the treasury will include an amount sufficient to begin work on proposed new ships.—Army and Navy Journal.

Preparing for the Waterways Convention.

The Hollenden will be the headquarters for the executive board of the International Deep Waterways Association, which is to hold a convention in Cleveland beginning on the 24th inst. About twenty members of the board are expected to assemble here on the Saturday preceding the convention. Upon request of Frank A. Flower, secretary of the executive board, the secretary of the navy has issued an order detailing Capt. Geo. P. Plow, U. S. N., as a delegate to the convention with permission to prepare a paper. Capt. Blow is in charge of the branch hydrographic office at Chicago. Convention meetings will be held in the rooms of the Cleveland chamber of commerce and will be looked after by the maritime board, recently organized within the chamber. Papers will be printed in advance to facilitate discussion. Gov. MacCorkle of West Virginia will attend with a delegation, and the Ontario contingent is arranging to charter a passenger boat and attend the convention in a body.

Around the Lakes.

Capt. Oscar Olson of the schooner Lizzie A. Law was drowned off a dock at Ashland on Friday last.

Ore shipments from Ashland to August 1 aggregated 1,776,003 gross tons, of which 483,143 tons was shipped during August.

The two upper gates of the new lock at Sault Ste Marie are in position and the contractors expect to have all the gates completed early in October.

Wm. Truby, division superintendent of the Pittsburg & Western Railway, will succeed the late J. R. Irwin as superintendent of the docks at Fairport.

Anchors and chains were about all that was recovered from the old lumber steamer Burlington, which burned recently at Manitoulin Island. The boat is a total loss.

Tonnage of the steel schooner Tyrone, recently built by the Globe company, Cleveland, is 2,117.72 gross and 1,862.01 net, and her official number 145,697. She was the only vessel registered last week in the office of the United States commissioner of navigation.

W. J. Connors of Buffalo stevedore fame is said to have contracted with the Union Dry Dock Co. of that city for a steel steam yacht, to be 132 feet long, schooner rigged, and to be fitted with water tube boilers and engines of high power, so as to secure speed when it is required.

Henry McMorran of Port Huron, who will attempt to raise the sunken steamer Britannic, is said to have agreed to float the boat for a stated sum, about $13,000, no cure no pay. McMorran will take out about two-thirds of the Britannic's ore cargo before he begins work on the wreck with his pontoons.

Grain receipts at Buffalo, flour included as grain, from the opening of navigation to Sept. 1 aggregated 68,634,132 bushels, against 83,058,260 bushels on the same date a year ago. Shipments of hard coal to Sept. 1 aggregated 1,149,689 net tons, against 1,299,067 tons on the same date in 1894 and 1,440,074 tons in 1893.

New vessels appearing in the September supplement of the Inland Lloyd's Vessel Register are the steel steamers Penobscot, Victory, Zenith City and Yale and steel schooner Tyrone. All are rated A 1. The Victory and Zenith City are each valued at $220,000, Yale and Penobscot at $225,000 each and the schooner at $115,000.

About the 15th inst. the structures from which the Pilot island range lights, St. Mary's river, are shown will be painted white and be moved about 500 feet to the eastward of their present position. One set of the range lights at the "Dark Hole" will be discontinued and the position of the other set will be slightly changed, and the range lights at Point of Woods will be moved about 80 feet to the northward of their present positions, so that these ranges will mark, in each case, as near as may be the axis of the newly dredged channel. The exact day that the changes will go into effect will be posted a day or two in advance in the canal office at Sault, Ste. Marie.

It would seem that there was, after all, some cause for reports that negligence had caused injury to the United States cruiser Columbia, while being docked at Southampton, England, on her return to this country from the celebration at Kiel. Secretary Herbert has ordered a court-martial for the trial of Capt. Sumner of the Columbia, who is represented to be solely to blame for the damage sustained by the cruiser. Commodore Sincard is president of the court, which will convene at the New York navy yard this week. It is claimed that the docking of the vessel was accomplished without the exercise of due caution. Keel blocks that had been mashed and were unfit for receiving the Columbia's flat keel were used, and 120 feet of the forward part of the ship was without any support whatever.

MASTERS OF LAKE VESSELS CAN NOT WELL AFFORD TO BE WITHOUT THE NEW CHARTS. EXAMINE THEM AT THE OFFICE OF THE REVIEW.

Dollar Ore for Next Year—High Freights.

One firm of Cleveland ore shippers has offered to make contracts with owners of a few large steamers at $1 on ore from the head of Lake Superior for the season of 1896, and although the facts can not be obtained it will very probably develop later that some business has already been done on this basis. Negotiations of this kind with vessel owners have thus far been confined to one house that controls both mines and furnaces, and is on that account in a position to close up freight contracts in advance of sales of ore for next season, but the fact that there is any talk of next season's business is an indication of the strong condition of the iron market and the bright prospects for another year. In a few cases some business has been done in ore contracts for the balance of the present season, notably a transaction with M. A. Bradley of Cleveland, who claims to have been paid better than $1.25 from the head of the lakes for September, October and November.

Of course there is no doubt now of a steady advance in lake freights right up to the close of navigation. Predictions regarding high grain freights are heard on all hands, and the movement of grain will undoubtedly be large enough under any circumstances to cause advances over the present figure of 3½ cents from Duluth to Buffalo, but the hopes of 5 or 6 cents being paid on wheat are dependent largely upon the export demand.

Coal shippers will be called upon to pay their share of the higher freight rates if the movement of coal is to come up to even the requirements of previous years. On Sept. 1 the soft coal shipments to all Lake Superior ports aggregated only 1,063,476 net tons, the shipments during August footing up only 400,846 tons, against 648,042 during August of last year. The shortage in anthracite coal is even greater than that noted in bituminous.

Notwithstanding the demand for vessels to load grain at Duluth, vessel owners find difficulty in forcing the ore rate from the head of Lake Superior much above $1, and at this writing the Escanaba rate is 70 cents with only 90 cents offered from Marquette. This wide difference between grain and ore is due to the fact that although there is a real boom in the iron business—pig iron selling above $18 in Pittsburg—the advantages of the situation are not to be fully realized in ore this fall. Stock piles have been moved and with a great scarcity of labor in the mining region it is impossible to swell the output of the mines, which are simply getting out ore that was sold and covered largely by freight contracts early in the season. Of course it is expected that "wild" ore freights will show a further advance, but there will be no big strides above the dollar mark from the head of the lakes.

Closing Contracts for New Ships.

The contract for another 400-foot freight steamer closed by Gen. Mngr. James Wallace of the Cleveland Ship Building Co., Tuesday, brings the list of steel freight and passenger steamers now under contract in lake ship yards up to ten. This includes the passenger boat building at Detroit and the revenue cutter at Cleveland, but has no reference to boats that have been launched and are being finished up for service this fall. Neither has it any reference to what Capt. James Davidson of West Bay City and others may do regarding wooden ships. The Cleveland Ship Building Co's latest contract is with A. B. Wolvin of Duluth and others, mostly owners of the Zenith City. The steamer will be 400 feet keel, 420 feet over all, 48 feet beam and 28 feet hold. She will be constructed on the channel system and will have a water bottom of five feet depth. Twelve hatches will be provided for handling cargo. Engines will be triple expansion, the same as those in the Victory and Zenith City. June 1, 1896, is the date fixed for her completion.

The list of new aids to navigation upon which Secretary Keep and Treasurer McKay of the Lake Carriers' Association have been engaged for several days past will be made up largely of gas buoys, which will be sought for the foot of Lake Huron, Graham shoal in the straits and points in the Sault river and above the St. Mary's Falls canal in the entrance from Lake Superior. There are also two light stations with fog signals that will be asked for. One of these is for Middle island, Lake Huron, and the other for Crisp's point, twelve miles west of Whitefish, Lake Superior. A light-ship for Martin's reef, between Detour and Mackinaw, is also on the list.

THREE BOOKS OF SAILING DIRECTIONS, ONE COVERING LAKE SUPERIOR AND THE ST. MARY'S RIVER, ANOTHER COVERING LAKE MICHIGAN AND THE STRAITS OF MACKINAC, AND A THIRD TAKING IN LAKES HURON AND ST. CLAIR WITH DETROIT AND ST. CLAIR RIVERS, ARE NOW OFFERED FOR SALE BY THE HYDROGRAPHIC OFFICE. THESE BOOKS ARE PARTS OF A WORK THAT WILL COVER THE ENTIRE CHAIN OF LAKES. THEY CONTAIN CHARTS OF LEADING CHANNELS AND HARBORS, AND MAY BE HAD FROM THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, AT $1 EACH.

Lake Superior Coal Shipments—Canal Traffic.

Figures relative to the Lake Superior movement of coal are again most interesting among the St. Mary's Falls canal statistics for August. Shipments of bituminous coal through the canal during August amounted to only 400,846 net tons, against 648,042 tons during August, 1894. Although practically no soft coal was shipped to Lake Superior until July in 1894, the shipments to Sept. 1 of this year are but 128,649 tons greater than they were on the same date a year ago. The following table gives the coal shipments in detail:

COAL SHIPMENTS TO LAKE SUPERIOR THROUGH SAULT CANAL.

	To Sept. 1, 1895.	To Sept. 1, 1894.
Bituminous, net tons	1,063,476	934,827
Anthracite, net tons	196,638	288,323
	1,260,114	1,223,150

General business of the canal for the month is again very heavy, and the season's commerce will, of course, exceed all previous records. Up to Sept. 1 the aggregate of freight passed through the canal was 8,858,148 net tons, of which 7,335,299 tons was east bound and 1,522,849 tons west bound.

ST. MARY'S FALLS CANAL TRAFFIC—OPENING OF NAVIGATION TO SEPT. 1, SEASONS OF 1894 AND 1895.

EAST BOUND.

Freight items.	Designation.	To Sept. 1, 1894.	To Sept. 1, 1895.
Copper	Net tons	61,165	68,770
Corn	Bushels	1,314,603	16,859
Building stone	Net tons	15,595	13,820
Flour	Barrels	4,523,295	4,676,592
Iron ore	Net tons	4,206,894	5,484,152
Iron, pig	Net tons	13,481	15,809
Lumber	M. ft. B. M	435,633	495,332
Silver ore	Net tons	412	100
Wheat	Bushels	13,517,730	11,655,128
Unclassified freight	Net tons	83,727	99,354
Passengers	Number	10,450	12,248

WEST BOUND.

Coal, anthracite	Net tons	288,323	196,638
Coal, bituminous	Net tons	934,827	1,063,476
Flour	Bushels	753	2,150
Grain	Bushels	2,500	31,650
Manufactured iron	Net tons	14,907	45,902
Salt	Barrels	99,876	157,720
Unclassified freight	Net tons	138,075	167,150
Passengers	Number	10,926	13,119

The American Steel Barge Co.

It might be expected that the present outlook in freights would certainly warrant the American Steel Barge Company in going ahead with the construction of more ships at its West Superior yard, but for the present at least nothing has been decided upon in that direction. The recent meeting of stockholders at Superior was a regular quarterly meeting and was not called for any special purpose. It is the custom of the company to hold one meeting each year at the head of the lakes. There was some talk of building two steamers during the winter, but action was deferred, as the policy of stockholders in control of the corporation is still against further building, and anyhow it would seem that the better part of judgment with a big company of this kind would be to sell a few of its smaller barges during the winter, when ships will probably bring fair prices, and then build big boats of modern dimensions. It is expected also that the demand for new ships during the coming fall and winter will be sufficient to give the management of the West Superior yard an opportunity to secure one or more contracts from outsiders.

Reference was made in the last issue of the REVIEW to the necessity of re-establishing the light and fog signal at Bete Grise bay, south side of Keweenaw point, Lake Superior. It has since been learned that not only has this light been authorized but an appropriation of $7,500 has been made for it by congress, and light-house officials will undoubtedly get around to the work of constructing it before long.

AN EXCELLENT LIBRARY FOR A MARINE ENGINEER, CHEAP—KEY TO ENGINEERING; WHAT AN ENGINEER SHOULD KNOW ABOUT ELECTRICITY; ENGINEERS' CATECHISM. ANY ONE OF THESE ARE WORTH A DOLLAR, BUT ALL THREE CAN BE HAD FOR $1. SEND TO THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, O. MONEY REFUNDED IF NOT SATISFACTORY.

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MARINE REVIEW

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 516 Perry-Payne building, Cleveland, O

SUBSCRIPTION—$2.00 per year in advance. Single copies 10 cents each. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,341 vessels, of 1,227,400.72 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons and over that amount on the lakes on June 30, 1894, was 359 and their aggregate gross tonnage 634,467.84; the number of vessels of this class owned in all other parts of the country on the same date was 316 and their tonnage 642,642.50, so that half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1894, was as follows:

Class.	Number.	Gross Tonnage.
Steam vessels	1,731	843,239.65
Sailing vessels	1,139	302,985.31
Canal boats	386	41,961.25
Barges	85	39,214.51
Total	3,341	1,227,400.72

The gross registered tonnage of vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	Number.	Net Tonnage.
Year ending June 30, 1890	218	108,515.00
" " " 1891	204	111,856.45
" " " 1892	169	45,168.98
" " " 1893	175	99,271.24
" " " 1894	106	41,984.61
Total	872	406,976.28

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.

(From Official Reports of Canal Officers.)

	St. Mary's Falls Canal.			SuezCanal.		
	1894.	1893.	1892.	1894.	1893.	1892.
No. vessel pass'ges	14,491	12,008	12,580	3,352	3,341	3,559
T'n'ge, net registd	13,110,366	9,849,754	10,647,203	8,039,106	7,659,068	7,712,028
Days of Navigat'n	234	219	223	365	365	365

Entered at Cleveland Post Office as Second-class Mail Matter.

A GREAT deal of nonsense is being written about the attitude of lake vessel owners towards the Chicago drainage canal. An editorial writer on one of the dailies says the vessel owners "are fairly bubbling over with joy to think that the relentless campaign to be waged by the association against the canal is to be backed up by the army engineers." The fact is that vessel owners as a rule have not paid near as much attention to the question of the effect of the canal on lake levels as the newspapers would have the public believe. As soon as there is definite information relative to the effect of the canal, the vessel owners will be heard from, especially if it is found that the water in lake channels and harbors is to be materially lowered, but the army engineers, as well as all other engineers, are as far from knowledge on this score as they have ever been. It is expected that the war department will, as a result of the report just submitted by Gen. Poe and his associates, take steps to secure further information on the lake outflow question, and when this is done the effect of the canal may be readily understood. For the present, vessel owners will satisfy themselves by awaiting further reports regarding the discharge of the lakes, and by trying to lay plans for government supervision of anything that may be done towards drawing off water from Lake Michigan. They will be on the look-out, however, for any scheme that would force the government to take the big sewer off Chicago's hands and make a river and harbor work of it. As a commercial waterway the Chicago canal will be of no use to the present generation, and not a dollar of government funds should be appropriated for it.

MEMBERSHIP in the Lake Carriers' Association is now above the coveted 600,000-ton mark. With the return to general prosperity in the carrying trade, tonnage dues are being paid up earlier than during any season for a long time past, and the executive officers of the organization are encouraged to go ahead immediately with matters that are to come before congress and the departments at Washington this fall. Secretary Keep will go to Washington shortly to consult officials of the light-house board relative to new aids to navigation, and it is more than probable that President Livingstone of Detroit will accompany him, as there are several matters on the programme of legislation for the coming winter that should be brought to the attention of the secretary of the treasury and the war department. After a list of new lights, fog signals, etc., has been agreed upon, and the light-house board consulted in the matter, it is the intention to get out a printed brief covering all that is wanted in the way of legislation, such as the widening of Hay lake channel and the Lime-Kiln cut; widening of the St. Clair canal, or the construction of a second canal at that point; the raft towing question, Chicago drainage canal question, etc. As Secretary Lamont and Secretary Carlisle have both made lake trips during the past summer it is expected that they will be found more conversant with matters pertaining to the commerce of this section of the country.

READERS of the REVIEW are acquainted with the performance of the fast twin-screw steamer Seaford, which was built for the channel service between New Haven and Dieppe, France, running in connection with the big Atlantic liners. This steamer was described and illustrated in our issue of April 11, 1895. She was run down by a French steamer in a fog a short time ago and sank in less than forty minutes after being struck, although she was subdivided in a manner equal to the best of passenger ships. No lives were lost, as the French steamer stayed by the sinking boat. No system of subdivision yet adopted seems able to secure a boat against sinking when she is rammed. The Seaford was built only last year by the famous scientific builders of the Clyde, William Denny & Bros., under the personal superintendence of Prof. Biles, who has for years past advocated greater subdivision for passenger vessels. It is almost a general rule in collisions for two compartments to be flooded, and in most cases one of these is either the boiler or engine room compartment, the largest in the ship. The ramming vessel usually comes out of the affair pretty well, as the collision bulkhead prevents any large amount of water entering her. If safety is to be secured, it would seem that the amount of subdivision will have to be increased, though it is difficult to see how the engine and boiler compartments can well be reduced in size.

SECRETARY KEEP of the Lake Carriers' Association is about to suggest to the bureau of statistics, treasury department, the advisability of again publishing a report covering lake commerce for the season of 1895. It will be remembered that Mr. Keep prepared quite an extensive report of lake shipping for the season of 1890, which was published under the supervision of the treasury bureau of statistics, and which was, as a whole, the most complete summary of lake statistics that had been gotten out for a great number of years previous. Work of this kind on the part of Mr. Keep is in line with the efforts of the Lake Carriers' Association in securing appropriations from congress, and will undoubtedly receive the endorsement of vessel owners, as statistics when submitted to congressional committees and members of congress are of little value unless they have the stamp of some department of the government. This is also a fitting time for such a report, as the business of the lakes in 1895 will be largely in excess of any year since 1890, and of course far greater than during any year previous to that time.

GEN. DUMONT of the steamboat inspection service should make it a point to see that someone is held responsible for the collision, a few days ago, between competing harbor tugs in Duluth, through which one of the tugs was sunk and a fireman lost his life. Rivalry between tug companies, similar to that now being carried on by the Inman and Singer lines in Duluth, caused the loss of the tug Forest City near Cleveland not long ago, and in that case loss of life was narrowly averted. If recklessness of this kind is allowed to go without punishment, it would certainly seem that there is no use of supporting an inspection service.

A FEW tugs were passed through the Canadian canal at Sault Ste. Marie, Tuesday, and it is now more than probable that the opening announced for Monday next will be a reality. If the approaches to the canal prove deep enough to admit of a draft of water even as great as that now carried through the United States canal, the Canadian waterway will undoubtedly relieve to a large extent the pressure of tonnage which is taxing the American lock to its full capacity.

GEN. KIMBALL of the life saving service is said to favor the construction of a new station at Cleveland. A few stations at dangerous points on the upper lakes where they are badly needed would seem more fitting than elaborate alterations in stations that are already good enough for all practical purposes.

ORDERS introducing a new star, the forty-fifth, in the United States flag, to represent Utah, will be issued shortly. The new flag will be 5 feet 6 inches by 4 feet 4 inches, with a field 28 by 30 inches. The staff will be 9 feet long. The width of each of the thirteen stripes will be 4 inches.

SUBSCRIBERS WILL AVOID DANGER OF MISTAKES BY GIVING THE OLD AS WELL AS THE NEW ADDRESS WHEN A CHANGE IS DESIRED.

Oil and Bagged Furnace Crowns.

The fact that the use of oil as an anti-incrustator in steam boilers should be occasionally attended by bagged furnace crowns, if nothing worse, continues to be a source of wonderment to a good many people who ought to know something of the possibilities of the oil treatment. It has been pretty well demonstrated that a very small globule of oil, on becoming attached to the inner side of a boiler sheet, will sometimes collect a mass of dirt particles contained in the water, and that the whole mixture will ultimately bake on and form an excellent non-conductor. This being the case, the overheating and bulging of the sheet at that particular place are quite in the regular order of things. The only specially noteworthy thing about the matter is that a very thin film of oil and a very small admixture of dirt are sufficient to do a great deal of harm, and that the scale formed by them may be so inconspicuous as to readily escape detection; hence, the seeming mystery which sometimes attends the coming down of a crown sheet.—Cassier's Magazine.

Trade Notes.

The schooner to be built at South Chicago for the North-Western Transportation Co. and the freight steamer for the Wilson line, upon which the Cleveland Ship Building Co. recently began work, are among ships that will come under the rules and inspection of the United States Standard Register of New York.

Mr. J. D. Williamson, Jr., of Williamson Bros., well known steering gear manufacturers of Philadelphia, recently completed a very satisfactory lake trip. Mr. Williamson's trip was of a pleasant and instructive kind, and considering that he took all orders from the Cleveland Ship Building Co., F. W. Wheeler & Co. and the Chicago Ship Building Co., it was also profitable.

A sketch and portrait of Charles Ward, inventor and manufacturer of the Ward water tube boiler, is contained in the August 30th issue of the American Shipbuilder, New York. Mr. Ward has been closely associated with naval engineers and other government officials in the development of his botler, and on this account is probably better known than any of the manufacturers of water tube boilers in this country.

A neat round-cornered catalogue and price list has been received from Jenkins Bros., No. 71 John street, New York. Illustrations and sizes of valves, packing, etc., are included. All engineers should have a copy of this book. On the first page the firm makes the following offer: "If you will put a Jenkins Bros'. valve on the worst place you can find, where you can not keep other valves tight, and if it is not perfectly tight, or does not hold steam, oils, acids, water or other fluids, longer than any other valve, you may return it and your money will be refunded."

Mr. T. R. Morgan, president of the Morgan Engineering Co., Alliance, O., writing Fisher & Porter of Chicago, western agents of the Bethlehem Iron Co., says: "During the last few years we have received a number of forgings of various kinds from your company, such as rams and piston rods, as well as shafting, of regular and irregular kinds, rough turned and shaped, and have found them without exception of the highest class, and they have given us the best of satisfaction. For making large forgings, with your unexcelled facilities, there is no concern in the world, which we know of, that can beat yours as regards first-class work, and anyone seeing your facilities must admit this to be the case."

Economy may be practiced in many ways in fitting out a new vessel, but when it comes to anchor chains, the owners and the builders, and especially the captain, want something that will hold. With small vessels most anything will do, but one of the modern 400-foot steamers will test an anchor chain for all it is worth. The P. Hayden S. H. Co., Columbus, has had a good share of this business and recently contracted for the cables for the three barges being built by the Chicago Ship Building Co. and for the new Cleveland & Buffalo line side-wheeler, as well as the Wilson line freight steamer, which is being built at the yard of the Cleveland Ship Building Co.

Two marine specialties have met with a large sale on the lakes since the construction of steel tow barges was taken up recently. One of these is the steam towing machine and the other is the Graham-Meyer torch, which is sold by leading ship chandlers. Of course the torch has met with sale on all towing vessels as well as the new steel boats, as it is the best thing of the kind as yet introduced and is not at all expensive. The Graham-Meyer company held its annual meeting in Portland a few days ago and re-elected last year's officers. Funds of the company warranted the payment of a dividend but it was voted to use the surplus in enlargement of the business.

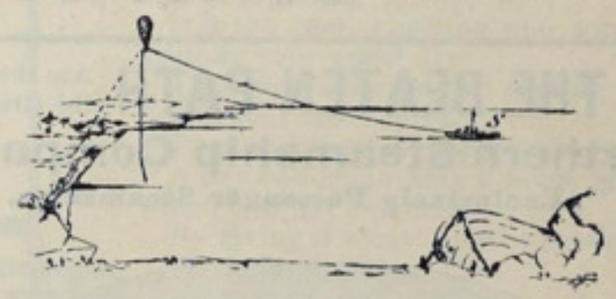
A CHART COVERING LAKE HURON, GEORGIAN BAY AND THE STRAITS OF MACKINAC, ALL ON ONE SHEET, HAS BEEN ISSUED BY THE HYDROGRAPHIC OFFICE AND MAY BE HAD FROM THE MARINE REVIEW AT 75 CENTS. LAKE SUPERIOR ON ONE SHEET AND LAKES ERIE AND ONTARIO IN THE SAME FORM ARE ALSO IN PRINT AND SELL AT THE SAME PRICE.

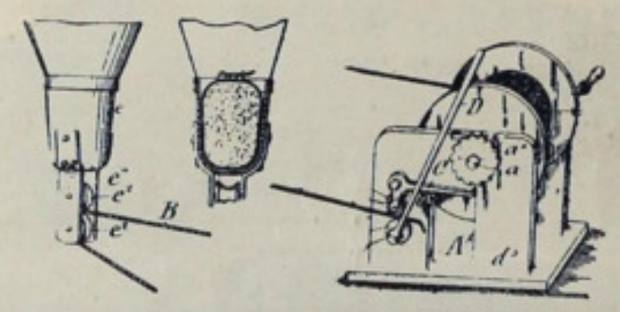
Illustrated Patent Record.

545,092. **Life-Saving Apparatus for Ships** Lew Parker, Brooklyn, assignor of one-fourth to William J. Quinlan, Port Richmond, N. Y. Filed Nov. 6, 1894. Serial No. 528,025.

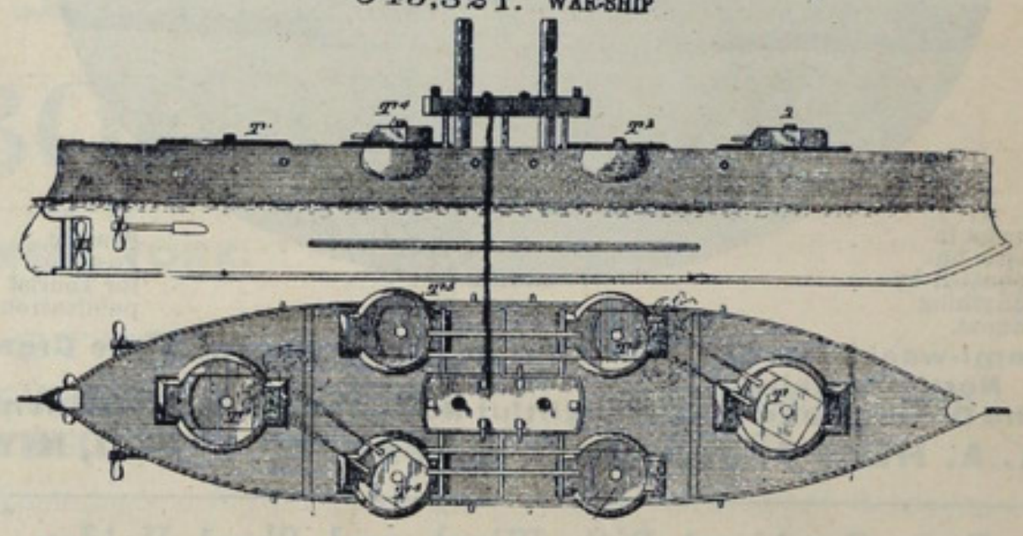
Claim. A life-saving apparatus for ships, consisting of a life-saving line, a drum on which the same is wound, a supporting-frame for the shaft of said drum, a ratchet-wheel on the end of the shaft, a crank at the opposite end of the same, a spring-actuated bell-crank lever fulcrumed to the supporting-frame of the drum, said lever being provided with a pawl on the longer and a roller on the shorter arm, a toothed cam pivoted eccentrically to the supporting-frame below said roller, and a lever attached to the eccentric cam so as to clamp the free end of the line between the roller and cam, or release the same for permitting the engagement of the pawl of the bell-crank-lever with the ratchet-wheel on the shaft of the winding-drum.

545,092. LIFE-SAVING APPARATUS FOR SHIPS





545,321. WAR-SHIP



545,321. **War-Ships.** George W. Van Hoose, Tuscaloosa, Ala. Filed Nov. 10, 1894. Serial No. 528,421.

Claim. The combination in a war-ship of a turntable, a rising and falling gun carriage and housing mounted thereon, and an inclosing and protecting barbette opening through the deck and having a circular shape on the middle parts to correspond to and back up the turntable under firing strain and also give armor space for the barbette and extended in the form of one or more longitudinal openings through the deck to permit of the rise and fall of the long guns therethrough.

U. S. ENGINEER OFFICE, 34 Congress St., Detroit. Mich., August 7, 1895. Sealed proposals for furnishing all labor, materials and appliances, for (A) removing shoals from west approach, St. Marys Fall's canal; (B) removing shoals from east approach, St. Mary's Fall's canal; (C) removing shoals off Six Mile Point, Hay Lake; and (D) removing shoal 29, section 4, ship channel, etc., will be received here until 2 p. m., September 6, 1895, and then publicly opened. All information furnished on application O. M. POE, Col., Engrs.,

Sept. 1.

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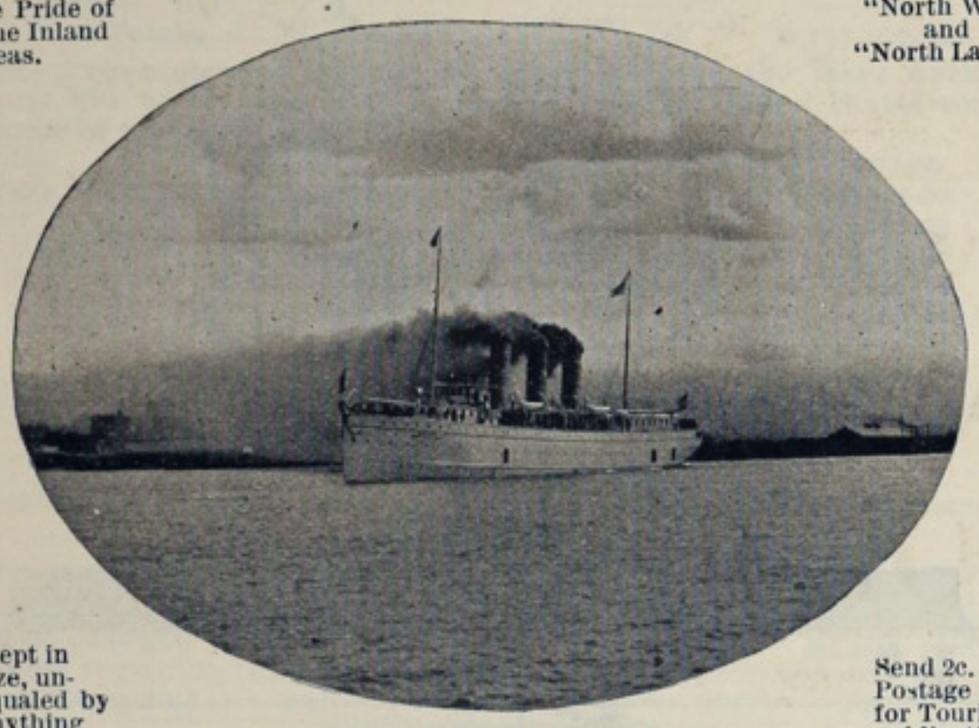

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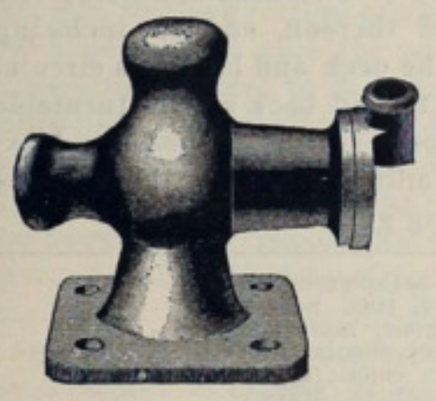

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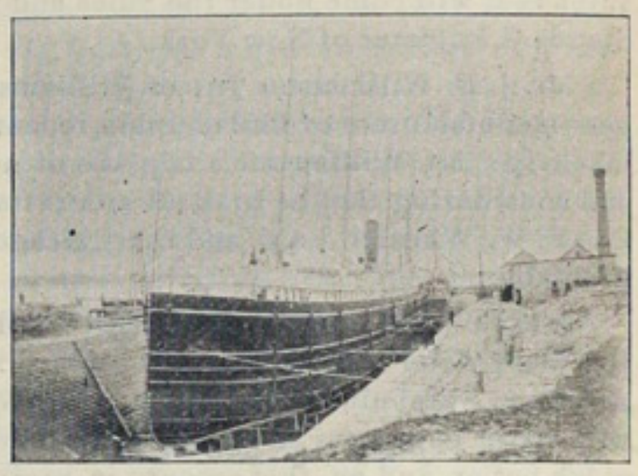
Length, 400 feet,
Width:
On top, 95 feet,
Bottom, 55 "
Gate, 62 "

Depth:
To Floor, 20 ft.
To Sill, 18 ft.
On Blocks, 16 ft.



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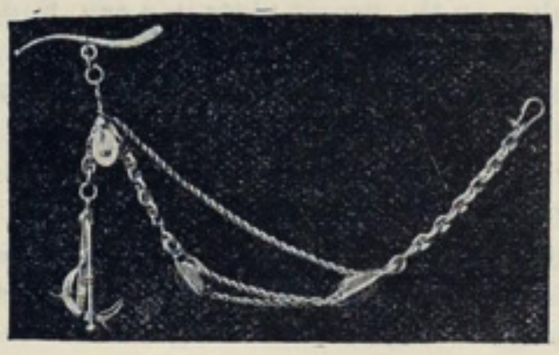

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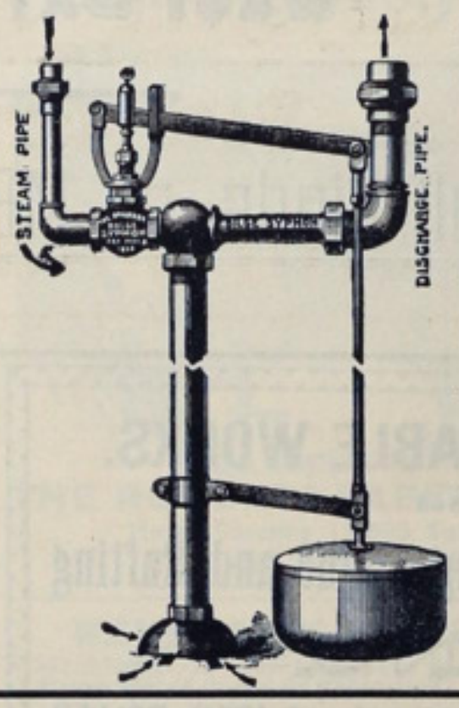

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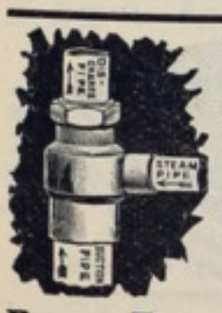

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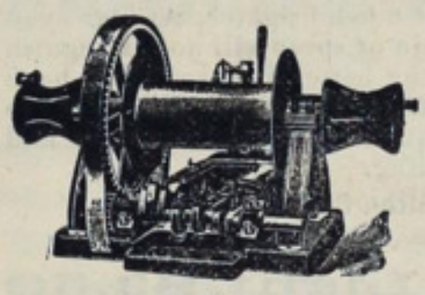

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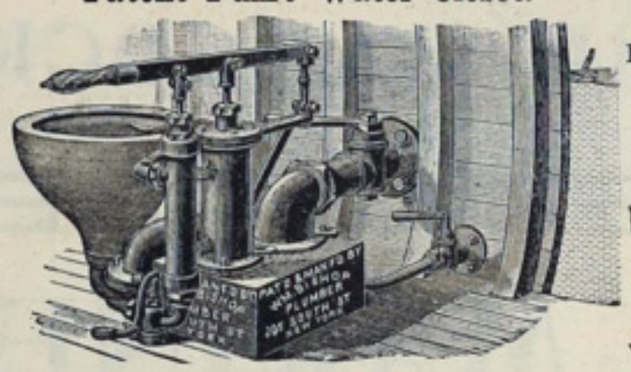

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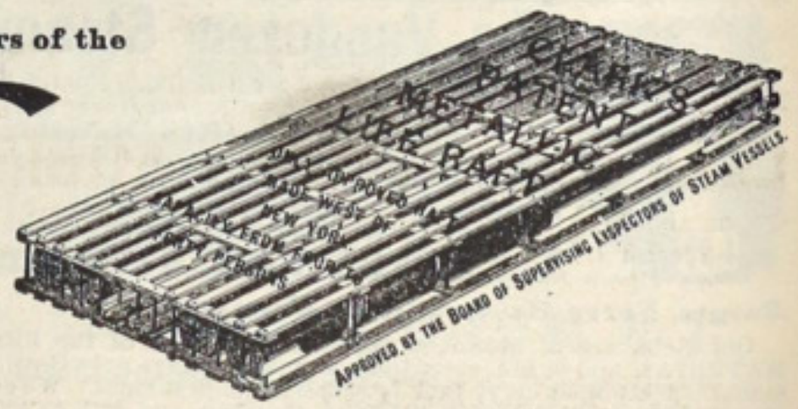

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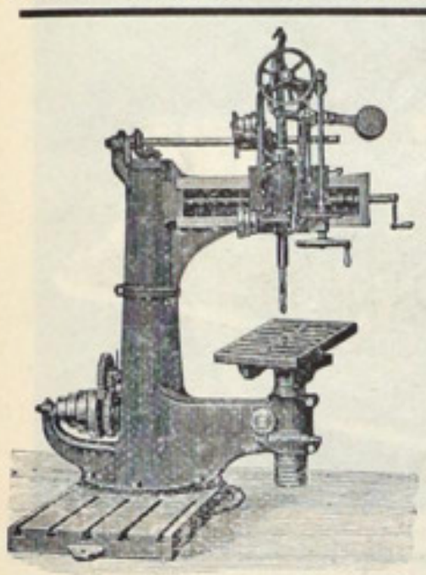

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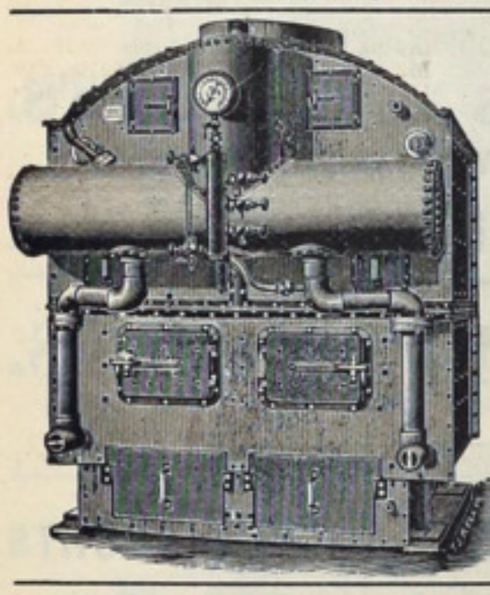

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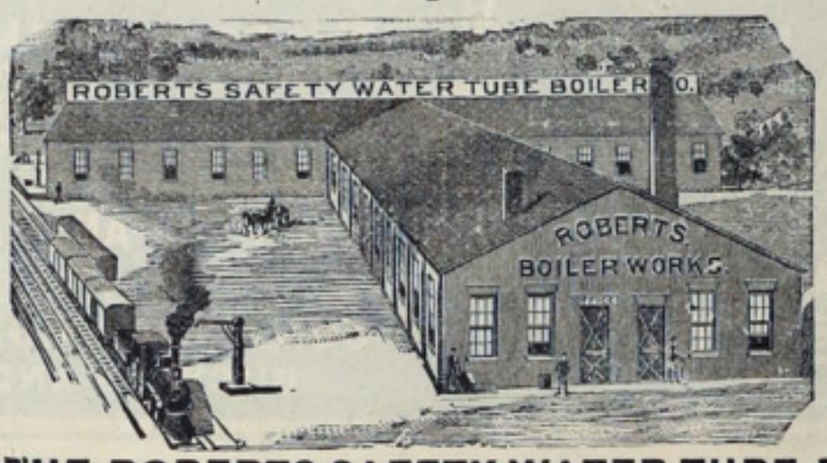

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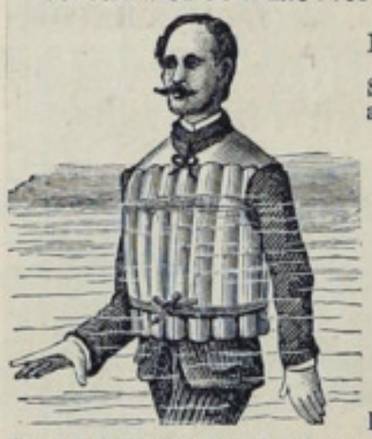

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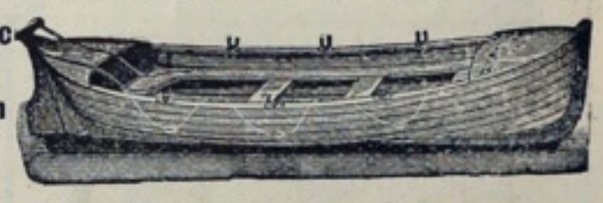

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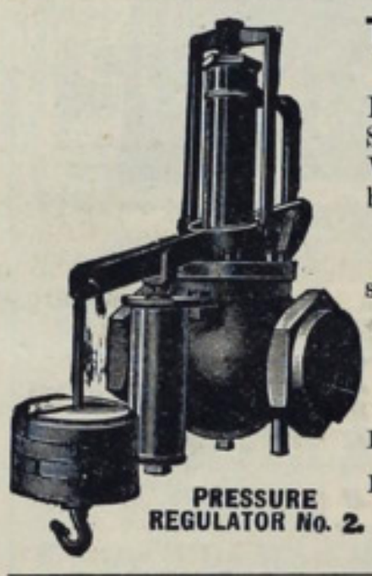

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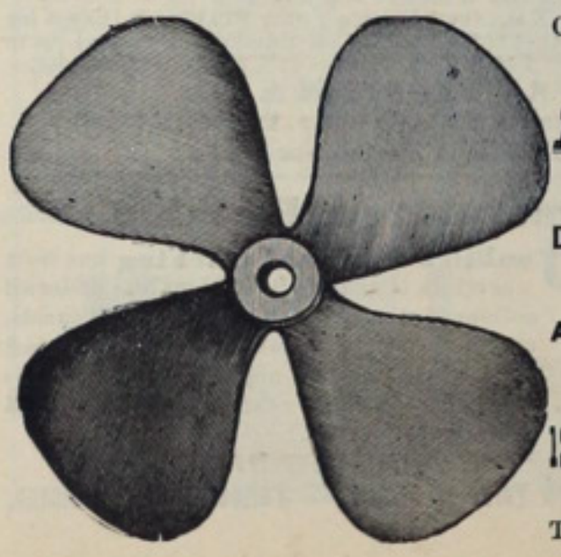

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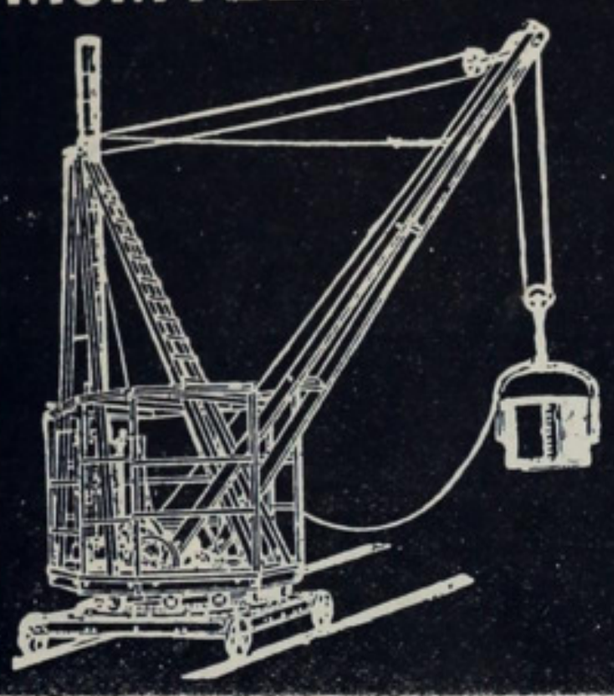

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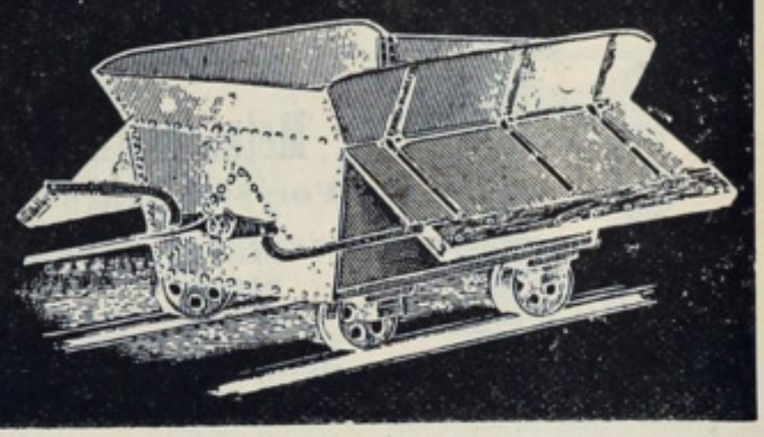

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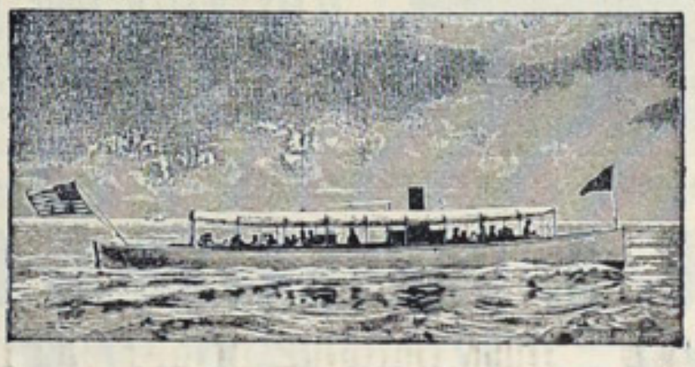

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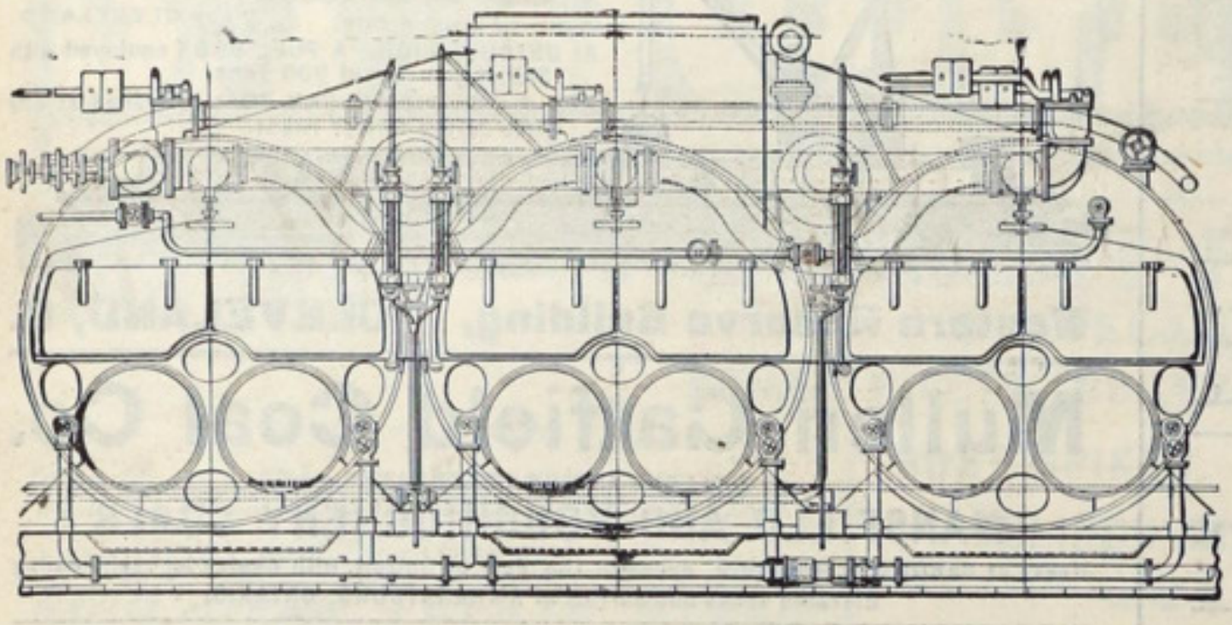

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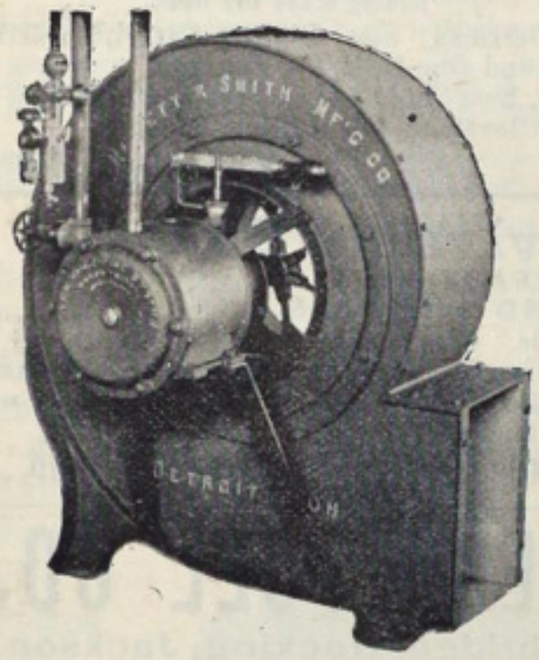

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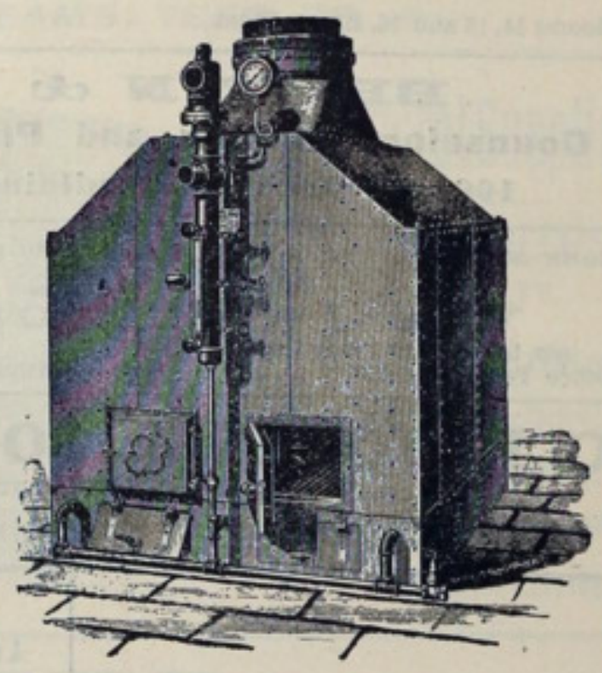

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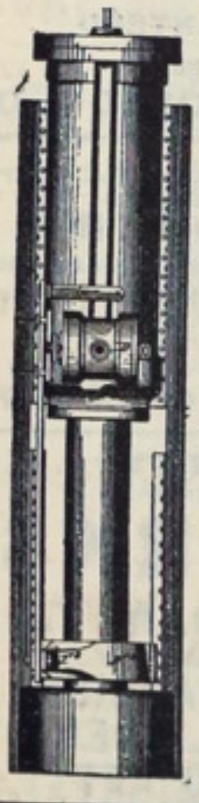

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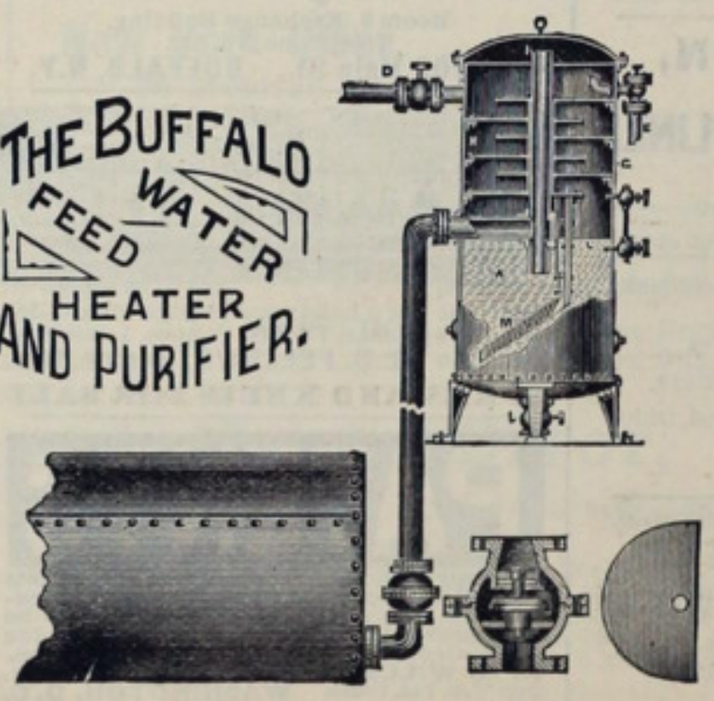

REFERENCES.

A.—Settling chamber.
B.—Boiler.
C.—Feed pipe to boiler.
D.—Steam pipe.
E.—Water supply pipe.
F.—Check valve.
G.—Spray disks.
H.—Spray chamber.
I.—Equalizing tube.
J.—Blow-off pipe.
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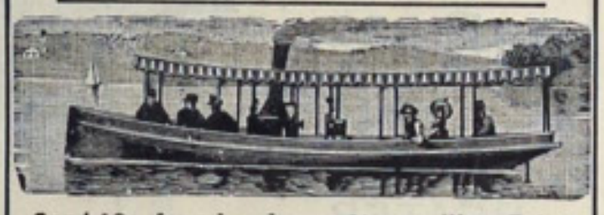

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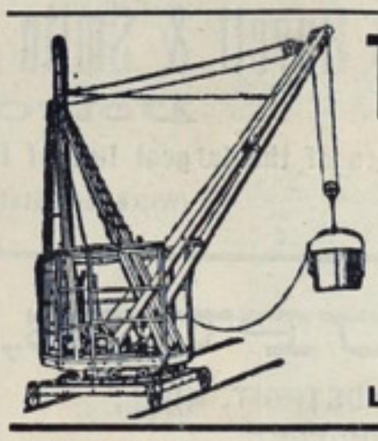

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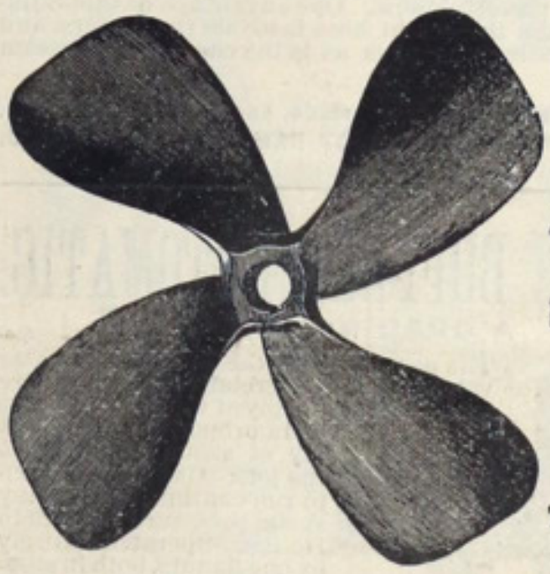

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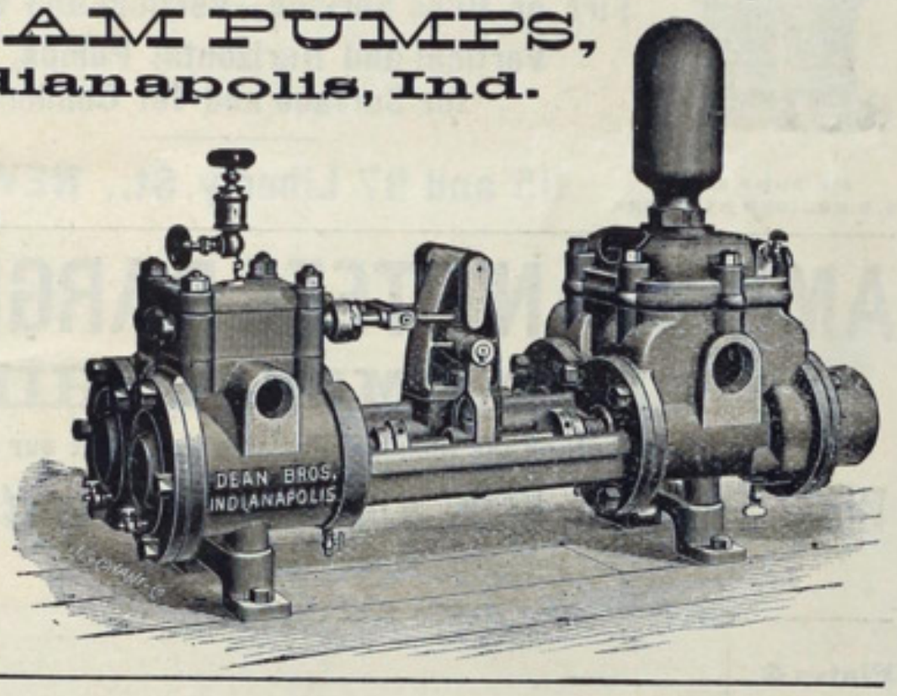

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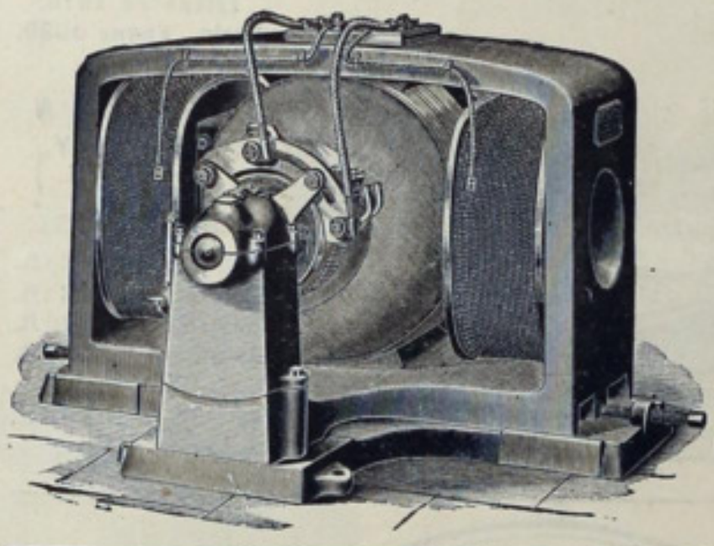

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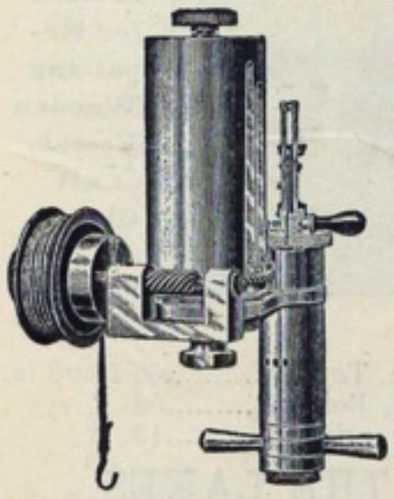

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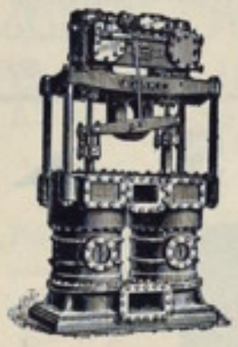

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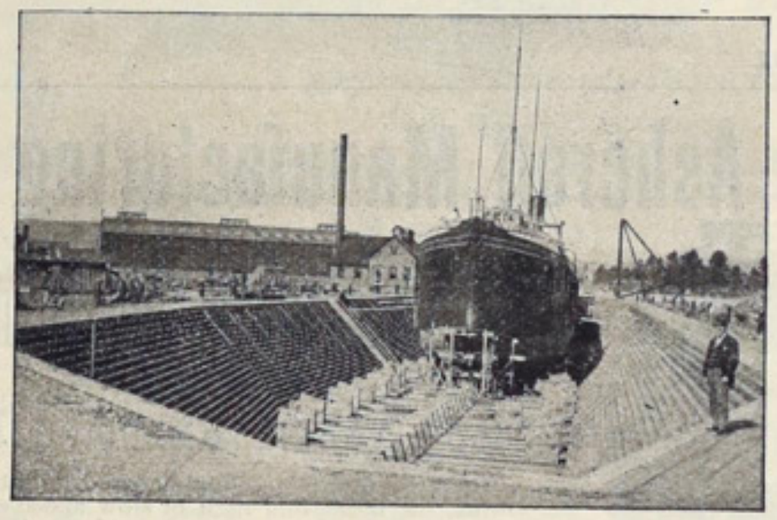

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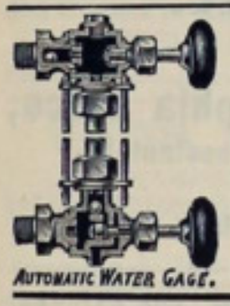

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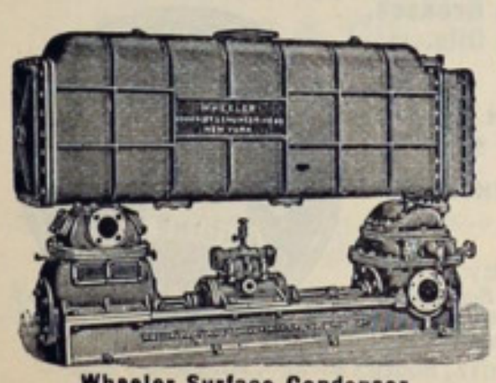

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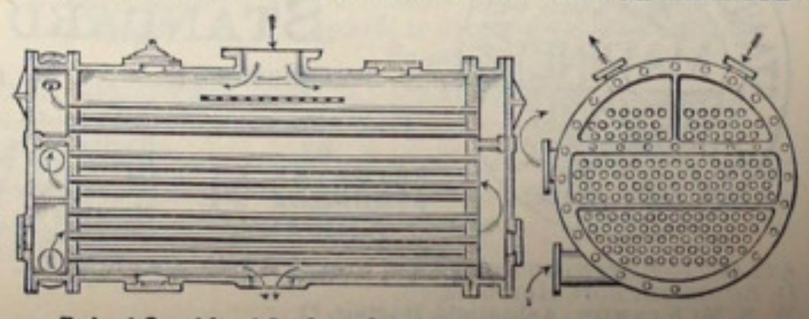

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